

## SCENARIO OF COLD STORAGE IN INDIA

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### ABSTRACT

*India is the second largest producer of the fruits and vegetables. In India the per capital availability of fruits and vegetables are lower than the normal requirement. India's produce is wasted due to inefficient methods of storage, handling and transportation. The country ranks third in fish production, with an output of over 8.5 million tones. However, frail cold chain logistics again lead to wastage of about 20-30 per cent of the production. AP is one of the largest producers of fruits and vegetables in the country with around 153.38 lakh MT of fruits and 110.83 lakhs MT of vegetables. However, because of the perishable nature of these products and non-availability of scientific storage facilities nearly one third of this total production is lost due to spoilage. The availability of cold storage capacity is about 25 million tonnes in 2010. The requirement was assessed to be 61 million tonnes. According to data the availability of cold storage capacity is about 25 million tonnes in 2010. The requirement was assessed to be 61 million tonnes; there is a need investment from the private sector to overcome it. It is important to spread the cold storages in all regions. Promotion of public-private partnership (PPP) in the management and development of cold storages. The cost of setting up solar power must be reduced to overcome the power storage.*

**KEYWORDS:** Cold Storage, Capacity & Number

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### INTRODUCTION

India is the second largest producer of the fruits and vegetables. In spite of being the second largest producer of fruits and vegetables in the world, its per capital availability is lower than the normal requirement. In India, vegetables output was about 147 million tonnes, accounting for nearly 11 per cent of the world's vegetable production, hardly 9 million tones of vegetables are stored scientifically (Amit Mitra, 2013). India occupies the first position in milk production and during 2011-12, India produced about 127 million tonnes of milk. The country ranks third in fish production, with an output of over 8.5 million tones. However, frail cold chain logistics again lead to wastage of about 20-30 per cent of the production.

A.P. is the 3rd largest producer of food grains in the country, with annual production of 20.4 million tonnes in 2008-09. The average will produce milk in the state is 24.3 million liters. per day. A.P. Produces 12.53 lakh tonnes of fish out of which 9.62 lakh tones of inland fish and 2.91 lakh tonnes of marine fish. AP is one of the largest producers of fruits and vegetables in the country with around 153.38 lakh MT of fruits and 110.83 lakhs MT of vegetables, comprising 19% of the total production of fruits in India. However, because of the perishable nature of these products and non-availability of scientific storage facilities nearly one third of this total production is lost due to spoilage.

The term Cold storage refers to a refrigerated chamber, for the storage of such perishable commodities as fruits, vegetables, fish, eggs, meat, dairy products, etc. In these storage structures, the temperature is controlled and maintained so that the stored perishable products may not deteriorate in quality. The demand for cold storage facilities is there for other agricultural products also. Presently density of cold storage is about two per thousand sq. km of area. Looking for the available quantities of perishable products (fruits & vegetables) the cold storage capacity available in the country is inadequate and requires their promotion both in the production as well as consuming areas of the State (Jairath, 2012). The availability of cold storage capacity is about 25 million tonnes in 2010. The requirement was assessed to be 61 million tonnes Siraj Hussain (2013); there is a need investment from the private sector to overcome it. Almost 95% of the cold storages in the Kerala state are for the storage of marine products and for the captive use of exporters (Jose, 2010).

The objective of the study to show the cold storage scenario (number and capacity) in India and Andhra Pradesh and reasons for the gap.

## METHODOLOGY

The required secondary data collected from the different sources and analyzed through compound growth rate.

Formulae for compound growth rate is

$$CAGR = \left( \frac{\text{Ending Value}}{\text{Beginning Value}} \right)^{\left( \frac{1}{\# \text{ of years}} \right)} - 1$$

## RESULTS AND DISCUSSIONS

CGR for Cold storage number from 2000 to 2012 in India is -0.86634. It means the average growth of the number of cold storages in India over 12 years after taking into account the impact of compounding is -0.86634. CGR for Cold storage capacity from 1990 to 2012 in India is -0.822432079. It means the average growth of the cold storage capacity in India over 12 years after taking into account the impact of compounding is -0.822432079.

CGR for Cold storage number from 2000 to 2012 in AP is -0.84695. It means the average growth of the number of cold storages in Andhra Pradesh over 12 years after taking into account the impact of compounding is -0.84695. CGR for Cold storage capacity from 1990 to 2012 in AP is -0.691023838. It means the average growth of the cold storage capacity in Andhra Pradesh over 12 years after taking into account the impact of compounding is -0.691023838.

**Table 1: Production, Cold Storage Number and Capacity in India**

SNO	Year	Number	Capacity in MTs	Total Production lakh Tonnes
1	2000	4045	14257584	2345.21
2	2001	4146	14912064	2380.00
3	2002	4417	16668144	2379.38
4	2003	4541	18209098	2363.28
5	2004	4748	19552344	2468.82
6	2005	4779	19624911	2682.55
7	2006	5101	21693986	2882.04
8	2007	5316	23333694	3007.20
9	2008	5386	23662812	3298.89
10	2009	5381	24450652	3385.58
11	2010	5620	26004152	3477.97

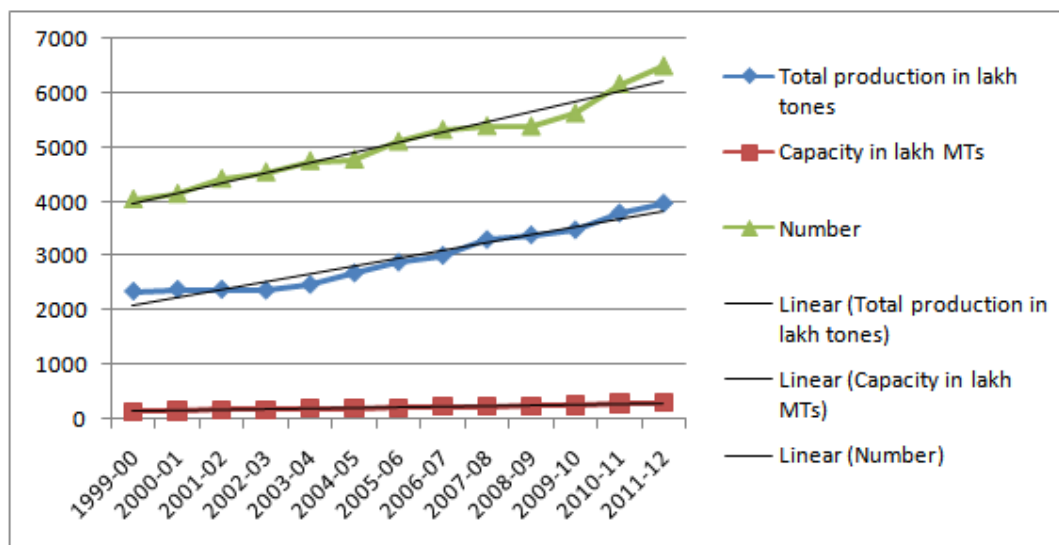
12	2011	6156	28680471	3789.06
13	2012	6488	30380274.53	3969.65

Table 1 indicates that in India the total production is increases continuously from 1999 to 2012. The number of cold storages increases continuously over a period. Cold storage capacity is increased from 1990 to 2012 but not as much as increase in total production (Graph 1).

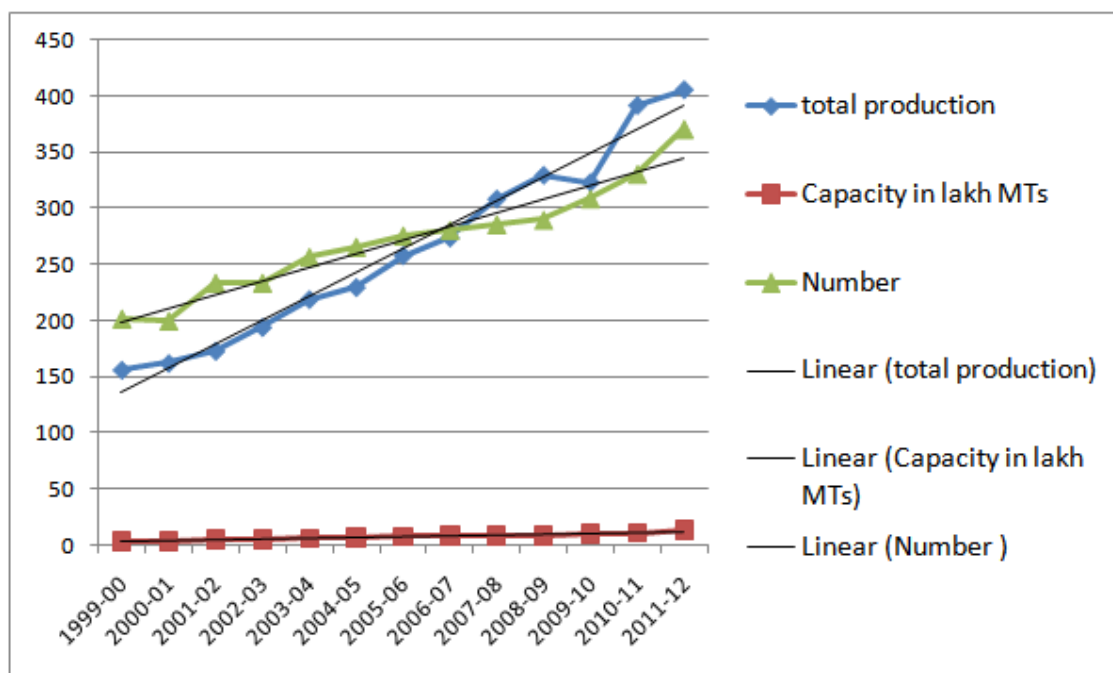
**Table 2: Production, Cold Storage Number and Capacity in AP**

SNO	Year	Number	Capacity in MTs	Total Production Lakh Tonnes
1	1999-00	202	376785	156.362
2	2000-01	200	386785	162.3933
3	2001-02	234	556785	173.3116
4	2002-03	234	566607	194.3755
5	2003-04	257	662867	219.263
6	2004-05	266	713729	229.9475
7	2005-06	276	820808	258.2305
8	2006-07	281	845811	274.1013
9	2007-08	286	875956	308.6012
10	2008-09	290	900606	329.8426
11	2009-10	309	1014606	323.4526
12	2010-11	331	1131807	391.888
13	2011-12	371	1397011	405.8252

The results in Table 2 show that in Andhra Pradesh total production is increasing continuously from 1999 to 2009, but it decreases in the year of 2010, then it increases up to 2012. The capacity and number of cold storages increase continuously over a period of time. The same results indicated in the Graph 2.



**Graph 1: Production, Cold Storage Number and Capacity in India**



**Graph: 2: Production, Cold Storage Number and Capacity in AP**

The main reasons for the gap was identified are unaware about cold storages. Most of the producers hold small holdings, which produces small surplus. The producers are unorganized and scattered. Lack of financial support and they need immediate money to settle down their debts, etc. Fruits and vegetables are brought to the markets on a daily basis. Most of the cold storages are located in cities and only in some regions.

### Policy Implications

- It is important to spread the cold storages in all regions.
- Promotion of public-private partnership (PPP) in the management and development of cold storages.
- The cost of setting up solar power must be reduced to overcome the power storage.
- Establish mini cold storages at the market place for the small farmers. For the reduction of storage losses hygiene, safety and proper maintenance should be there in cold chain industry.

### CONCLUSIONS

Food grain production reached a record level of 259.32 million tonnes in 2012-13. Globally, India is the third largest producer of cereals, with only China and the USA, ahead of it. A.P. is the 3rd largest producer of food grains in the country, with annual production of 20.4 million tones in 2008-09. Andhra Pradesh ranks 1<sup>st</sup> in production of maize and produces nearly 21% of the maize in the country. The average will produce milk in the state is 24.3 million liters, per day. Due to lack of proper scientific storage structures, almost 30-40 per cent of the production lands up in the waste bin every year, leading to higher costs for consumers and shrinking presence of India in the global vegetable export market, which has slumped to 1.7 per cent. The inadequate storage is resulting in an annual wastage of about Rs 35,000-crore worth fruits and vegetables. over period of time (1999-2012) the total production, cold storage number and capacity is increases

continuously. The main reasons for the gap were unaware about cold storages. Most of the producers hold small holdings, which produces small surplus. The producers are unorganized and scattered. Lack of financial support and they need immediate money to settle down their debts etc. Fruits and vegetables are brought to the markets on a daily basis. High installation cost. To overcome this encouraging of PPP model and using of solar power is appreciable.

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